8 Attachment 8 – Quality Assurance

This application includes appropriate and well-defined quality assurance and control measures. To ensure the highest quality of information is obtained, the project includes the quality assurances, including, but not limited to, the following:

8.1.1 General

- Meetings will be conducted to verify project findings with District staff and other stakeholders.
- Progress reports will be provided to DWR for review and comment regarding project status.
- The Final Project Report will be stamped by a Professional Engineer, Registered Geologist, or Certified Hydrogeologist.

8.1.2 Project Team

- All work will be performed under the supervision of and reviewed accordingly by, a Professional Engineer, Registered Geologist or Certified Hydrogeologist.
    - **Rick Iger, Provost and Pritchard** – Mr. Iger is a principal engineer at Provost & Pritchard with over 34 years of experience in water resources engineering projects. He is a Registered Civil Engineer (RCE 38272). His experience includes complete development and management of a variety of engineering projects including flood protection, floodplain management, and conjunctive use and conveyance facilities. His technical experience includes planning, design, construction, maintenance/improvement, operations, monitoring and evaluation of flood protection systems such as channels and levees; groundwater recharge and recovery facilities; and water conveyance and storage facilities. Mr. Iger also has project administration skills including development of funding and participation agreements with multiple parties; grant writing, reporting and administration; preparation of reports documenting system performance; preparation and coordination of integrated regional and urban water management plans; overseeing and facilitating technical and policy related committees; and preparation of floodplain, water well, and groundwater ordinances.
    - **Ken Schmidt, Kenneth D Schmidt and Associates** – Dr. Schmidt started his professional career in groundwater in Arvin, California in December 1964. After receiving his PhD in 1972, Dr. Schmidt founded the specialized hydrogeologic consulting firm Kenneth D. Schmidt and Associates (KDSA). Since the mid-1990's, the firm has been a leader in groundwater resource evaluations in Central California. Specialized work performed by KDSA includes development of new supply wells and recharge facilities, groundwater monitoring for waste-water management facilities, and evaluations for development of new projects.
    - **Chris White, Central California Irrigation District** – Mr. White has served as General Manager of Central California Irrigation District since 1999, for the seven years prior to this appointment, Mr. White served as the District Engineer of CCID. He is a Registered Civil Engineer (RCE 48073) and a Professional Land Surveyor (LS 5355). Since 1977 he has worked within the region that includes the service area of the San Joaquin River

Exchange Contractors Water Authority and the northern service area of the San Luis Unit on issues related to land use, irrigation, and drainage. In addition to managing CCID, he also serves on the multiple committees with the SJRECWA; these include the Finance Committee, the Legislative Committee, and the Water Transfer Committee.

8.1.3 Legal Issues

- The Authority legal counsel will review and provide comments on contracts, technical specifications, public notices, and board resolutions adopted as part of this study.

8.1.4 Construction

Central California Irrigation District Construction Crews will be used to build facilities. District construction crews are familiar with, and have completed many similar construction projects. The use of District crews will provide a cost savings to the Authority, compared to contracting the work out, and will also provide for a similar level of quality as required by the Authority specifications. District crews are very experienced with formed concrete work, installation of pipe segments, construction of stilling wells, and the installation of flow measurement equipment and staff gauges.

Concrete structures will follow the codes and recommendations of the ACI 318, Building Code Requirements for Structural Concrete, as well as the guidelines of the ACI Manual of Concrete Practices. All electrical installation will follow the national electric code. Finally, manufacturer installation recommendations and requirements of any permits will be followed. Safety is of the utmost importance, and compliance with CalOSHA and OSHA is strictly adhered to.

8.1.5 Water Sampling

- Groundwater quality monitoring will be conducted in compliance with the Groundwater Quality Monitoring Act of 2001 (Part 2.76 commencing with Sec. 10780 of Division 26 of the CWC).
- Water quality sampling will follow standard, documented procedures (see **Exhibit 8.1**).
- Water quality testing will be performed by accredited, experienced, state-certified testing laboratories to ensure appropriate testing methods and chain of custodies.
- All water quality results will be reviewed by an experienced water quality specialist.
- All water samples will be given a Quality Assurance Code, which represents the relative confidence in the water sample. The following codes will be used:
  - 0: No information available to rank the quality assurance
  - 1: Questionable measurement; some quality assurance procedures not followed
  - 2: Reliable measurement with all quality assurance procedures followed

8.1.6 Environmental Issues

- Required CEQA documentation will be prepared by an appropriate environmental professional or licensed engineer.
- All necessary permits will be secured for all work to ensure that work follows appropriate environmental and regulatory standards.

8.1.7 Technical Review

- All work performed on the study will be reviewed by senior staff before submission to DWR.
- Review comments on a Draft Report, and possibly some interim submittals, will be solicited, and incorporated when merited, from the DWR, District Board members, the public, and other pertinent agencies.
- Kenneth D. Schmidt and Associates, a hydrogeologic consultant, will provide important independent review of the technical work.

MONITORING PROTOCOLS FOR GROUNDWATER QUALITY AND GROUNDWATER LEVELS

Water-Quality Monitoring Protocols

1) Do not take a sample until an adequate pumping time has elapsed. Ask the project manager what the pumping time should be or take sample after temperature, pH and electrical conductivity have stabilized.
2) Always use proper sample containers, preservatives, and holding times.
3) Always use secure chain-of-custody procedures.
4) Ideally, use of the same laboratory for all testing, except for split samples sent to separate laboratories for comparison.
5) Only perform testing at accredited, state-certified laboratories.
6) Testing on some samples should include spiked, duplicate and field-blank samples for comparison to genuine samples.
7) Use proper handling procedures (e.g. placing the containers in an ice chest immediately after collection).
8) Document all protocols and procedures that are used.
9) Generally take all samples during periods of both minimal pumping in the winter and heavy pumping in July and August.

Water-Level Monitoring Protocols

1) Perform all water level measurements in as short a period as possible.
2) Document the measuring device, date, time and measurement reference point for each well.
3) Test each well twice, or more if needed, until consistent results are obtained.
4) If there is reason to suspect groundwater contamination, water level measuring equipment must be decontaminated, and in general, measurements should proceed from the least to the most contaminated wells.